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WHAT IS CLAIMED IS:

Sub D1

1. A flexible joint assembly for conducting a fluid, comprising:

a joint assembly inlet;

a joint assembly outlet; and

a fluid flow path between the inlet and the outlet, the fluid flow path including:

a first pivot joint;

a second pivot joint; and

a central fluid conductor fluidly coupling the pivot joints,

wherein the pivot joints together provide greater than a 60° bend between the inlet and the outlet.

2. The flexible joint assembly of claim 1 wherein each of the first pivot joint and second pivot joint independently comprises a ball and socket joint.

3. The flexible joint assembly of claim 2 wherein each ball and socket joint comprises:

a socket;

a ball received in the socket; and

a seal between the ball to the socket.

4. The flexible joint assembly of claim 3 wherein each ball and socket joint further comprises a compressing member axially compressing the seal between the ball and the socket.

5. The flexible joint assembly of claim 4 wherein each compressing member comprises a retaining ring compressing the seal between the ball and the socket.

6. The flexible joint assembly of claim 1 wherein the central fluid conductor couples to a first ball of the first pivot joint and a second ball of the second pivot joint.

7. The flexible joint assembly of claim 1 wherein the first pivot joint and the second pivot joint together provide a substantially 90° bend between the inlet and the outlet.

8. The flexible joint assembly of claim 1 wherein the central fluid conductor is unitary.

9. The flexible joint assembly of claim 1 wherein the central fluid conductor is shorter than 10 centimeters.

10. The flexible joint assembly of claim 1 wherein the joint assembly inlet and the joint assembly outlet include a fitting.

11. The flexible joint assembly of claim 1 wherein each pivot joint independently provides greater than a 35° bend in the fluid flow path.

12. The flexible joint assembly of claim 1 wherein each pivot joint independently provides greater than a 40° bend in the fluid flow path.

13. A flexible joint assembly comprising:

a joint assembly inlet;

a joint assembly outlet; and

a fluid flow path between the inlet and the outlet, the flow path including:

a first pivot joint;

a second pivot joint; and

a central fluid conductor fluidly coupling the pivot joints, each of the first pivot joint and second pivot joint including:

an inner member;

a receiving member dimensioned to pivotally receive at least part of the inner member;

a sealing member sealing between the inner member and the receiving member; and

a supporting member supporting the sealing member substantially uniformly over the entire length of the seal between the inner member and the receiving member.

14. The flexible joint assembly of claim 13 wherein each sealing member comprises an annular seal having a first surface.

15. The flexible joint assembly of claim 14 wherein each supporting member comprises an annular support having a second surface configured to mate with the first surface of the annular seal thereby supporting the annular seal substantially uniformly.

16. The flexible joint assembly of claim 13 wherein:

each receiving member comprises a first engagement surface; and

each supporting member comprises a second engagement surface, wherein

the first engagement surface is configured to engage the second engagement surface to maintain a fixed relative position between the receiving member and the supporting member.

17. The flexible joint assembly of claim 16 wherein the first engagement surface includes threads dimensioned to engage with threads on the second engagement surface.

18. The flexible joint assembly of claim 13 wherein each sealing member comprises an elastomeric material.

19. The flexible joint assembly of claim 13 wherein:

each inner member comprises a ball;

each receiving member comprises a socket; and

each sealing member comprises an O-ring sealing the ball to the socket.

20. The flexible joint assembly of claim 19 wherein the O-ring has an inner diameter greater than 90% of the diameter of the ball.

21. A flexible joint assembly comprising:

a joint assembly inlet;

a joint assembly outlet; and

a fluid flow path between the inlet and the outlet, the fluid flow path including:

a first pivot joint configured to pivot about a first pivot P1;

a second pivot joint configured to pivot about a second pivot P2; and

a central fluid conductor fluidly coupling the first pivot joint and the second pivot joint, each of the first pivot joint and the second pivot joint including:

an inner member having a dimension D in a direction substantially normal to a path through the respective of the joint assembly inlet and outlet;

a receiving member dimensioned to receive at least part of the inner member; and

a sealing member sealing the inner member to the receiving member at a distance of less than 14% of the dimension D from the respective pivot.

22. The flexible joint assembly of claim 21 wherein:

the first pivot P1 is a pivot point;

the second pivot P2 is a pivot point.

23. A flexible joint assembly comprising:

a joint assembly inlet;

a joint assembly outlet; and

a fluid flow path between the inlet and the outlet, the fluid flow path including:

a first pivot joint configured to pivot over a first arc about a first pivot P1;

a second pivot joint configured to pivot over a second arc about a second pivot P2; and

a central fluid conductor fluidly coupling the pivot joints, each of the first pivot joint and second pivot joint including:

a received joint member having a dimension D in a direction substantially normal to a path through the respective of the joint assembly inlet and outlet; and

a receiving joint member dimensioned to pivotally receive at least part of the received joint member, wherein:

either the received joint member is coupled to one of the joint assembly inlet and the joint assembly outlet and the receiving joint member is coupled to the central fluid conductor, or the receiving joint member is coupled to one of the joint assembly inlet and the joint assembly outlet and the received joint member is coupled to the central fluid conductor; and

a contact point between each receiving joint member and the central fluid conductor whereby the pivot joint is fully pivoted over the respective arc being within 75% of the dimension D distant from the respective pivot.

24. The flexible joint assembly of claim 23 wherein each receiving joint member extends less than 35% of the dimension D beyond the respective pivot.

25. The flexible joint assembly of claim 24 wherein each receiving joint member extends less than 30% of the dimension D centrally beyond the respective pivot.

26. The flexible joint assembly of claim 23 wherein each of the first pivot P1 and the second pivot P2 is a pivot point.

27. The flexible joint assembly of claim 23 wherein each receiving joint member:

is coupled to one of the joint assembly inlet and the joint assembly outlet; and

defines a chamber in communication with the central fluid conductor, the chamber being dimensioned to subsume an at least 115° arc about the respective pivot.

28. A flexible joint assembly comprising:

a first ball and socket joint;

a second ball and socket joint; and

a unitary central fluid conductor connecting the first ball and socket joint and the second ball and socket joint, wherein the assembly is configured to withstand pressures between about 200 and 5000 PSI.

29. The flexible joint assembly of claim 28 wherein each of the first ball and socket joint and second ball and socket joint comprises:

a sealing member between the ball and the socket; and

a supporting member contacting the sealing member substantially uniformly over the entire length of the seal between the ball and the socket.

30. A method of servicing a fluid system comprising:

connecting a service device with a service port of the fluid system, the service device including a flexible joint assembly including a pair of ball and socket joints connected by a fluid conductor; and

transporting a fluid pressurized to between 200 and 5000 PSI through the service device.

31. The method of claim 30 wherein the fluid is a refrigerant.

32. The method according to claim 30 wherein the flexible joint assembly is configured to bend through an angle of up to 90°.

33. The method according to claim 30 wherein the fluid is pressurized to above 300 PSI.

34. The method according to claim 30 wherein:

each of the ball and socket joints includes

a ball having a diameter D and pivoting about a pivot point, and

a retaining ring retaining the ball in the ball and socket joint; and

the fluid conductor includes each ball connected by a pipe member.

35. The method according to claim 30 wherein the fluid system comprises a climate control system.

36. A method of servicing a fluid system comprising:

connecting a service device with a service port of the fluid system, the service device including a flexible joint assembly including a pair of flexible joints connected by a fluid conductor and configured to bend through an angle greater than 60°; and

transporting a fluid through the service device.

37. The method according to claim 36 wherein the flexible joint assembly is configured to bend through an angle greater than 80°.

38. The method according to claim 36 wherein the flexible joint assembly is configured to bend through an angle greater than 88°.

39. The method according to claim 36 wherein the fluid system comprises a climate control system.

40. The method according to claim 36 wherein the fluid comprises a refrigerant.